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Physical Parameters and Fish Capture Data at Selected Nicola River Basin Sites during 1986, 1987 and 1988

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Rapport statistique canadien des sciences halieutiques et aquatiques

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ABSTRACT

Lauzier, R. 1989. Physical parameters and fish capture data at selected Nicola River Basin sites during 1986, 1987 and 1988. Can. Data Rep. Fish. Aquat. Sci. 741: 27 p.

A sampling program for rearing juvenile salmonids was conducted in the Nicola River Basin during 1986, 1987 and 1988. The physical parameters and fish capture data from each sampling site are presented.

Physical parameters include water temperature (°C), percent substrate composition, percent cover, sampling methodology, sample area, water conductivity, depths and velocities.

Fish capture data include Zippin population estimates for salmonids, the population density per square metre for salmonids, as well as total site catch for rearing salmonids and other fish species.

RÉSUMÉ

Lauzier, R. 1989. Physical parameters and fish capture data at selected Nicola River Basin sites during 1986, 1987 and 1988. Can. Data Rep. Fish. Aquat. Sci. 741: 27 p.

Un programme d'échantillonnage pour l'élevage de salmonidés juvéniles a été mis en oeuvre dans le bassin de la rivière Nicola en 1986, 1987 et 1988. Les données de capture et les paramètres physiques pour chaque poste d'échantillonnage sont présentés.

Les paramètres physiques comprennent la température de l'eau (°C), la composition du substrat en pourcentages, le pourcentage de couverture, la méthode d'échantillonnage, la superficie de la zone d'échantillonnage, la conductivité de l'eau, la profondeur et la vitesse d'écoulement.

Les données de capture comprennent les évaluations de population selon la méthode Zippin, la densité de la population de salmonidés (par mètre carré) ainsi que le total des captures (salmonidés destinée à l'élavage et autres espèces de poissons) à chaque poste d'échantillonnage.

INTRODUCTION

A monthly and bi-weekly sampling program for rearing juvenile salmonids was conducted in the Nicola River Basin between January 14,1986 and November 27, 1986. The sampling was conducted at selected sites on a weekly basis during the summer. Sampling continued opportunistically in 1987 and 1988. The site locations are shown in Figure 1.

METHODS

The water temperature was taken with a hand-held thermometer and read to the nearest half-degree Celsius. A visual estimate was made of the percentage substrate and cover composition, to the nearest ten percent, for the entire sample site. A number of fish sampling methods were used, depending on hydraulic conditions, turbidity, water temperature and substrate. Electrofishing with a battery powered backpack Smith-Root Model 11A was used in the mainstem sample sites, when turbidity, temperature and hydraulic conditions allowed feasible electrofishing. The multiple pass and removal method was used, in conjunction the Zippin method of population estimates (Higgins 1985). The sample sites were usually 30-80 m long, in order to sample heterogeneous habitat. Electrofishing was also used in a variety of off-channel habitats to a limited extent. Other fish sampling methods were used in the mainstem when conditions did not allow feasible electrofishing. These methods included beach seines, pole seines, and minnow trapping. Beach seining was conducted by towing a 15 m seine (5 mm wing, 3 mm bunt mesh) by hand off the bank, creating a semicircle with the net by towing it back to shore. The net was retrieved from two shore points, with the lead line slightly ahead of the float line. The catch was enumerated and measured for each set, and Zippin population estimates were calculated at each sample site. The pole seine (3 m long, 1.5 m deep, 3 mm mesh) was used mainly in side channels and back channels, and to a limited extent in mainstem habitats during freshets. The pole seine was used on a regular basis immediately downstream of inclined plane traps installed at Spences Bridge. Minnow traps were used extensively in off-channel ponds, with chum roe as bait. Velocities and depths were measured with a Marsh-McBirney Model 201D electromagnetic current meter. Current velocites were measured at 0.6 of the depth for depths less than 1 m, and at 0.8 and 0.2 of the depth and averaged for depths 1 m or greater. Five depths and velocities were usually measured at each sample site, in areas where fish were captured or observed. Conductivity was measured with Cole-Parmer Model SJ-1481-50 hand-held digital conductivity meter. The readings were manually compensated for temperature, by dialling in the ambient water temperature in the meter. Sample site descriptions are given in Lauzier and McPherson (1986).

RESULTS

Table 1 lists the physical parameters that were measured at each sample site. Each row has the name of the river system for a sampling site; the date (day,month,year); the time (P.S.T.); the station number; the water temperature (°C); an estimate of % substrate composition at the sample site categorized as boulder, cobble, gravel, sand, silt and hardpan); an estimate of % cover of the sample site (categorized as boulder, cobble, gravel, cutbank, log debris, overstream vegetation and instream vegetation); sampling methods (minnow trapping, electrofishing, beach seining, pole seining); sample area or time (time in hours for minnow trapping, area in square metres for all other methods); and velocities and depths. Where there were five velocity and depth values, these were measured. Where there was one velocity and depth value each, these were estimated. The depths were measured in centimetres and the velocities in centimetres per second. The final parameter measured was the water conductivity measured in micromho. Any blank spaces mean that the particular parameter was neither measured nor estimated.

Table 2 lists the biological information at each site. The first four columns list the river site, date, time, station number and water temperature; as in Table 1. The next three columns list the Zippin population estimates for chinook, coho, and rainbow trout juveniles, respectively, for each sample area. The Zippin population estimates were calculated from electrofishing, beach seining and pole seining capture data, using a program adapted from Higgins (1985) on an Apple II Plus micro-computer. Where there were blanks in Zippin population estimates of species that have a listed total catch, there was insufficient data to calculate population estimates with statistical confidence limits. However, a minimum possible population number was calculated, but not listed in this table. Capture data from minnow trap sampling was not used in Zippin population estimates. The columns under the reading Total Site Catch were the actual numbers of fish caught in the sample site. These numbers were categorized as chinook, coho, rainbow trout, mountain whitefish, Dolly Varden char, lamprey (ammocetes and metomorphosed juveniles), cyprinids, suckers, and finally all other species combined (cottids etc.). The actual number caught was the total of three passes, with the exception of minnow trapping. The final three columns are measures of the population density per square metre for chinook, coho and rainbow trout juveniles, respectively. These population densities were calculated from the Zippin population estimates, when the Zippin estimates were possible. The 95% confidence limits are listed with the Zippin estimates. In the case when only minimum population number could be calculated (i.e. there are no Zippin population estimates in a particular row), these numbers are the minimum population densities (without any 95% confidence intervals). Each data line in Table 2 corresponds with a data line in Table 1.

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REFERENCES

Higgins, P.J. 1985. An interactive computer program for population estimation using the Zippin method. Aquacult. Fish. Manage. 16(3):287-295

Lauzier, R.B. and C.A. McPherson. 1986. Length and weight data for juvenile salmonids sampled during rearing studies in the Nicola/Coldwater river system, during December 1984 and in 1985. Can. Data Rep. Fish. Aquat. Sci. 599: 165 p.

Table 1. Physical parameters measured at sampling stations in the Nicola River system during 1986, 1987, and 1988. Data include date, Pacific Standard Time, station number, water temperature (°C), estimate of % substrate composition (BO-boulder, CO-cobble, GR-gravel, SA-sand, SI-silt, HP-hardpan); estimate of % cover (BO-boulder, CO-cobble, GR-gravel, CB-cut-bank, LD-log debris, OV-overstream vegetation, IV-instream vegetation); sampling methodology (MT# = minnow trapping, including number of traps, ES = electrofishing, PS = pole seining, BS = beach seining); SA/T = sample area or time (sample time in hours if minnow trapping, sample area in square meters for all other sample methods); velocity (centimetres/sec); depth (centimetres); conductivity (micromhos).

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SUBSTRATE BO	CO	GR	SA	SI	HP	COVER BO	CO	GR	CB	LD	OV	IV	SM	SA	DEPTHS & VELOCITIES V1	D1	V2	D2	V3	D3	V4	D4	V5	D5	COND
NICOLA	860114	1020	21	0.5	00	10	30	00	60	00	00	00	00	00	00	00	00	ES	102	5	30									275
NICOLA	860114	1215	22	0.5	30	70	00	00	00	00	30	30	00	20	00	00	00	ES	40											348
NICOLA	860115	0830	21															MT6												
NICOLA	860115	0910	22															MT6	21											
GUICHON	860116		20	0.0														ES	40	8										
GUICHON	860116		20	0.0														ES	40	8										
GUICHON	860116		20	0.0														ES	40	8										
NICOLA	860116	0930	1	0.0	00	00	99	01	00	00	00	00	00	60	40	00	00	ES	50	6	100									48.9
NICOLA	860116	0930	1	0.0	00	20	50	20	10	00	00	00	00	60	00	40	00	ES	40	12	80									48.9
NICOLA	860116	1200	31															MT8	27	12	80									
NICOLA	860116	1245	1	0.0														MT6	3											
NICOLA	860116	1345	7	0.0	10	90	00	00	00	00								MT6	3											
NICOLA	860116	1400	39	0.0	00	50	50	00	00	00								MT8	24											
NICOLA	860116	1530	40															MT8	26											
NICOLA	860118	1000	29	1.0	40	20	10	00	30	00	40	00	00	40	20	00	00	MT6		20	150									
NICOLA	860118	1000	29C	5.0														MT8		2	80									
NICOLA	860118	1410	29C	2.0	99	00	00	00	01	00	60	00	00	40	00	00	00	ES		6.5	90									132
NICOLA	860218	1600	31	6.0														MT20	5											
NICOLA	860218	1650	32	1.0														MT10	6											
NICOLA	860219	0915	28P	2.0														MT14	25											
NICOLA	860219	1305	31	6.0														MT7	26											
NICOLA	860219	1515	181															MT16	27											
NICOLA	860220	0845	28	4.0	00	00	00	50	50	00	00	00	00	00	80	20	00	MT20	24											
NICOLA	860220	0955	32															MT9	41											
NICOLA	860220	1315	181															MT10	22											
NICOLA	860220	1515	31															MT20	26											
GUICHON	860224	1000	20	1.5														ES	40											
GUICHON	860224	1100	20	1.0	50	30	00	10	10	00								ES	40											
NICOLA	860225	1025	28P	6.0														MT15	19											
NICOLA	860226	0850	28P	6.0														MT15	22.5											

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SUBSTRATE BO	CO	GR	SA	SI	HP	COVER BO	CO	GR	CB	LD	OV	IV	SM	SA	DEPTHS & VELOCITIES V1	D1	V2	D2	V3	D3	V4	D4	V5	D5	COND
NICOLA	860318	1045	33	5.0	25	55	20	00	00	00	00	60	00	00	00	00	40	ES	25.4	71										172
NICOLA	860318	1255	27	4.0	10	50	40	00	00	00	00	30	00	70	00	00	00	ES	70.5	46	30	42	33	31	18	11	21	16	18	117
NICOLA	860318	1435	34	6.0	00	50	50	00	00	00	00	30	00	70	00	00	00	ES	68.7	43	30	34	26	31	33	19	18	13	18	191
NICOLA	860318	1615	38	6.0	40	40	10	05	05	00	30	10	00	60	00	00	00	ES	51	12	31	22	33	51	39	12	45	5	48	197
NICOLA	860319	1000	40	6.0	50	20	30	00	00	00	10	10	00	80	00	00	00	ES	36	32	24	92	23	25	18	95	21	14	15	174
NICOLA	860319	1115	36	5.5	30	50	20	00	00	00	30	00	00	70	00	00	00	ES	46.8	25	112	6	9	44	22	5	36	37	27	
NICOLA	860402	1045	40	6.5	30	60	10	00	00	00	20	20	00	60	00	00	00	ES	74	26	21	67	30	12	18	75	35	20	28	189
NICOLA	860402	1335	33	6.0	30	50	25	00	00	00	10	10	00	00	00	00	20	ES	96	21	36	30	38	42	36	17	14	52	30	185
NICOLA	860402	1530	27	6.5	40	40	20	00	00	00	30	10	00	00	00	00	00	ES	108	40	21	22	18	36	23	44	15	12	16	111
NICOLA	860403	1120	38	6.0	80	00	00	10	10	00	50	00	00	00	00	00	05	ES	47.4	10	26	18	21	-4	46	6	51	38	32	177
NICOLA	860403	1400	36	6.0	60	10	00	15	15	00	40	00	00	00	00	00	00	ES	105	39	25	67	38	16	12	30	35	13	14	144
NICOLA	860403	1550	34	6.0	50	50	00	00	00	00	30	20	00	00	00	00	00	ES	38	5	18	12	33	35	45	25	22	36	27	165
NICOLA	860415	1350	38	7.0	80	10	00	00	10	00	50	00	00	00	00	00	00	ES	54	5	35	0	19	1	29	4	54	5	30	142
NICOLA	860415	1555	33	7.0	30	50	20	00	00	00	10	10	00	00	00	00	00	ES	150	14	34	18	35	1	15	2	15	0	12	142
NICOLA	860416	1100	40	7.0	50	20	20	10	00	00	30	10	00	00	00	00	00	ES	108	0	54	26	15	62	24	24	22	50	27	152
NICOLA	860416	1320	36	7.0	70	00	00	00	30	00	30	00	00	00	00	05	05	ES	80	10	42	34	35	17	45	16	52	-9	44	150
NICOLA	860416	1535	27	6.5	20	40	40	00	00	00	05	05	00	00	00	00	00	ES	101	15	12	22	17	32	19	16	12	16	16	92
NICOLA	860417	1420	34	9.0	40	50	00	10	00	00	20	20	00	00	00	00	00	ES	90	3	9	21	17	37	38	52	40	3	11	161
NICOLA	860501	1615	26	8.5	00	10	50	40	00	00	00	00	05	00	20	00	30	ES	22	-4	31	20	55	47	54	28	38	5	28	
GUICHON	860502	0815	20	10.0	05	85	10	00	00	00	05	10	00	00	00	00	50	ES	39.2											458
NICOLA	860502	1055	18	10.0	00	05	25	00	70	00	00	10	15	00	00	00	00	ES	66											177
NICOLA	860502	1330	33	9.0	20	70	10	00	00	00	15	50	00	00	00	00	00	ES	81	27	25	25	30	50	18	11	24	25	22	149
NICOLA	860502	1515	36	9.0	40	20	00	00	40	00	30	00	00	00	00	00	00	ES	77.7	20	51	1	18	49	33	2	44	25	30	152
NICOLA	860502	1630	38	9.5	80	10	00	00	10	00	50	00	00	00	00	00	00	ES	58.5	43	31	-5	40	27	42	12	45	0	33	157
NICOLA	860502	1900	21	8.0	00	30	00	00	70	00	00	20	00	00	00	00	20	ES	57.4											279
NICOLA	860503	0815	40	9.0	30	30	30	00	10	00	20	20	00	00	00	00	00	ES	70.8	36	14	5	24	0	7	0	22	60	18	153
NICOLA	860503	1255	991	10.0														ES	36	30	33	0	11	4	26	-2	14	6	20	
NICOLA	860514	0750	26	6.0	00	00	60	00	40	00	00	00	10	00	20	00	20	ES	19											188
NICOLA	860514	0930	36	6.0	10	30	00	00	30	00	00	00	00	00	05	00	05	ES	48											161

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SUBSTRATE BO	CO	GR	SA	SI	HP	COVER BO	CO	GR	CB	LD	OV	IV	SM	SA	DEPTHS & VELOCITIES V1	D1	V2	D2	V3	D3	V4	D4	V5	D5	COND
NICOLA	860514	1030	38	7.0	70	15	00	00	15	00	00	10	00	00	00	05	00	PS	10	-6	36	7	52	1	67	-11	39	-1	25	
NICOLA	860514	1030	38	7.0	70	15	00	00	15	00	00	10	00	00	00	05	00	PS	10	-6	36	7	52	1	67	-11	39	-1	25	
NICOLA	860514	1130	40	7.5	30	30	30	00	10	00	10	10	00	00	00	00	10	ES	60	6	60	20	28	3	12	1	19	85	18	
NICOLA	860514	1130	40	7.5	30	30	30	00	10	00	10	10	00	00	00	00	10	PS	60	6	60	20	28	3	12	1	19	85	18	
GUICHON	860515	0745	20	9.0	05	85	10	00	00	00	05	10	00	00	00	00	50	ES	21.5											556
NICOLA	860515	0930	21	6.0														PS											
NICOLA	860515	0930	36	6.0	10	30	00	00	30	00	00	00	00	00	05	00	05	PS	48											
NICOLA	860515	1000	18	9.0	00	05	25	00	70	00	00	10	15	00	00	00	00	PS	20											
NICOLA	860515	1000	18	9.0	00	05	25	00	70	00	00	10	15	00	00	00	00	PS	14											
NICOLA	860515	1000	18	9.0	00	05	25	00	70	00	00	10	15	00	00	00	00	PS	40											
NICOLA	860515	1215	33	9.0	20	70	10	00	00	00	15	50	00	00	00	00	00	ES	80											159
NICOLA	860515	1935	991	10.0														ES	48											
NICOLA	860516	2230	991	3.0														ES	20	53	27	19	33	10	30	30	34	24	33	
NICOLA	860517	2030	991	12.0														ES	39.4	50	30	10	29	22	42	27	33	16	18	
NICOLA	860518	2025	991	12.0														ES	39.4	5	24	10	39	41	40	80	29	0	22	
NICOLA	860521	2335	991	8.0														PS	39.4											
NICOLA	860523	0015	991	10.0														PS	39.4											
NICOLA	860523	2335	991	8.0														PS	39.4											
NICOLA	860524	2320	991	12.0														PS	39.4											
NICOLA	860525	2105	991	13.0														PS	39.4											
NICOLA	860526	1355	18	12.0	00	00	60	40	00	00	00	00	00	00	00	00	10	PS	102											
GUICHON	860526	1520	20		55	40	00	00	05	00								ES	22.7											441
GUICHON	860527	0800	20	10.0	05	00	00	00	95	00								ES	20											439
NICOLA	860527	0915	21															PS	122											
NICOLA	860528	1040	33	8.5														PS	27.8											
NICOLA	860528	1140	36		05	00	00	00	95	00								PS	20											
NICOLA	860528	1530	991	11.0	05	00	20	00	75	00								PS	13.4											
NICOLA	860528	1625	40	11.0	05	00	00	00	95	00								PS	9											
NICOLA	860528	1700	38	11.0	10	00	00	00	90	00								PS	5											
NICOLA	860602	2100	991	13.0	00	05	30	00	65	00								PS	24											
NICOLA	860603	2210	991	12.0	00	10	35	00	55	00								PS	24											
NICOLA	860604	2400	991	12.0	00	05	30	00	65	00								PS	24	2	28	6	19	10	24	1	33	3	14	

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SUBSTRATE BO	CO	GR	SA	SI	HP	COVER BO	CO	GR	CB	LD	OV	IV	SM	SA	DEPTHS & VELOCITIES V1	D1	V2	D2	V3	D3	V4	D4	V5	D5	COND
NICOLA	860605	2245	991	14.0	00	05	30	00	65	00								PS	24	1	15	4	30	6	23	1	34	1	21	
NICOLA	860606	2200	991	13.0	00	05	10	00	85	00								PS	30	5	19	6	23	3	24	6	30	1	25	
NICOLA	860607	2245	991	13.0	00	05	40	00	55	00								PS	28	8	31	23	43	19	34	13	24	14	30	
NICOLA	860608	2045	991	13.0	00	15	45	00	40	00								PS	35	8	24	9	16	19	39	16	41	11	30	
NICOLA	860609	2230	991	14.0	00	05	30	00	65	00								PS	36											
NICOLA	860610		21	14.0	05	30	00	65	00	00								PS	20.8	-12	36	-28	27	23	45	7	70	-8	60	
NICOLA	860610	1400	18	13.0	00	00	50	50	00	00	00	00	00	00	00	00	00	PS	18											
GUICHON	860610	1500	20	16.0														ES												593
NICOLA	860610	1630	26	14.0	00	90	00	10	00	00	00	00	00	10	00	00	00	PS	12											
NICOLA	860610	2055	991	15.0	00	30	05	00	65	00								PS	38.4											
NICOLA	860611	0900	40	12.0	20	05	00	00	75	00	10	00	00	00	00	00	30	PS	10	92	36	100	27	88	30	85	32	84	27	
NICOLA	860611	0950	38	13.0	50	25	00	00	25	00	10	00	00	00	00	00	10	PS	8.8											
NICOLA	860611	1030	36	13.0	30	00	00	70	00	00	00	00	00	00	00	00	30	PS	8	42	28	21	26	15	24	27	30	16	27	
NICOLA	860611	1120	33	12.0	05	00	00	95	00	00	00	00	00	00	00	00	45	PS	09.9	0	19	22	30	19	24	19	18	24	26	
NICOLA	860611	2045	991	14.0	00	30	05	00	65	00								PS	38.4											
GUICHON	860612	0915	20	12.0														ES	13											
NICOLA	860612	2025	991	16.0	00	10	20	00	70	00								PS	38.4											
NICOLA	860613	2040	991	16.0														PS	38.4											
NICOLA	860614	2240	991	14.0	00	10	30	00	60	00								PS	38.4											
NICOLA	860615	2050	991	14.0	00	10	20	00	70	00								PS	38.4											
NICOLA	860616	2150	991	15.0	00	10	00	00	90	00								PS	38											
NICOLA	860617	2150	991	13.0	00	10	00	00	90	00								PS	38											
NICOLA	860618	2035	991	15.0	00	10	00	00	90	00								PS	38											
NICOLA	860619	2130	991	13.0	05	05	05	00	85	00								PS	35											
NICOLA	860620	2125	991	13.0	05	05	05	00	85	00								PS	35	6	39	-4	33	-2	27	-1	30	-7	39	
NICOLA	860621	2040	991	15.0	05	05	05	00	85	00								PS	35											
NICOLA	860622	2005	991	14.0	05	05	00	00	90	00								PS	35	10	36	0	30	0	30	0	30	-3	36	
GUICHON	860623		20															ES	50											
GUICHON	860623		20	16.0														PS	9.8											
NICOLA	860623	2015	991	15.0	05	05	00	00	90	00								PS	36											

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SUBSTRATE BO	CO	GR	SA	SI	HP	COVER BO	CO	GR	CB	LD	OV	IV	SM	SA	DEPTHS & VELOCITIES V1	D1	V2	D2	V3	D3	V4	D4	V5	D5	COND
NICOLA	860624		36	16.0														PS	11.4	69	27	67	28	40	33	64	40	26	45	
NICOLA	860624		40	16.0	85	10	00	05	00	00								PS	37											173
NICOLA	860624	1430	33	17.0														PS	25.4	4	24	37	27	57	27	65	36	73	35	
NICOLA	860624	1520	18		00	00	00	95	05	00	00	00	00	00	00	00	02	PS	29.8	-2	45	0	39	0	41	0	36	-1	34	
GUICHON	860624	1605	20	18.0	20	50	30	00	00	00								ES	18.5	43	42	64	29	80	34	-50	52	-17	50	
GUICHON	860624	1605	20	18.0	20	50	30	00	00	00								PS	40											
NICOLA	860624	1640	26	18.0	00	90	00	10	00	00								ES	13.4	56	30	30	42	51	26	34	15	0	15	
NICOLA	860624	2220	991		05	00	05	00	90	00								PS	36											
NICOLA	860625	0800	38	15.0	75	00	00	00	25	00	00	00	00	00	00	00	45	ES	29.3											
NICOLA	860625	0840	40	16.0	90	07	00	03	00	00								PS	56.3											
NICOLA	860625	2020	991		05	00	05	00	90	00								PS	36											
NICOLA	860626	2025	991		05	00	05	00	90	00								PS	30											
NICOLA	860627	2030	991	16.0	05	00	05	00	90	00								PS	30											
NICOLA	860628	2015	991	16.0	05	00	05	00	90	00								PS	5.3	1	22	1	56	3	37	7	63	4	31	
NICOLA	860630	2100	991	17.0	20	30	00	00	50	00	10	00	00	00	00	00	10	PS	9											
NICOLA	860701	1945	991	17.0	30	10	10	00	50	00	10	05	00	00	00	00	40	PS	6.9	5	20	11	26	17	34	13	28	21	30	
NICOLA	860702	1925	991	17.0	30	00	00	00	70	00	30	00	00	00	00	00	20	ES	14	44	16	21	27	4	53	6	33	8	21	
NICOLA	860703		991	17.0	10	10	20	00	60	00								PS	13	-2	41	0	57	0	25	0	14	0	25	
NICOLA	860704	1945	991	15.0	10	00	00	00	90	00	05	00	00	00	00	00	20	PS	13	4	39	13	44	8	54	8	45	0	45	
NICOLA	860708	1400	18	16.0	05	95	00	00	00	00	00	00	00	00	00	00	05	ES	37.5	68	21	60	21	40	12	55	21	95	18	
GUICHON	860708	1516	20	12.0							05	00	00	00	20	00	00	PS	142											
GUICHON	860708	1606	20	12.0	50	50	00	00	00	00	50	00	00	00	00	00	00	ES	179											
NICOLA	860708	1646	21	12.0	10	70	00	20	00	00	10	00	00	00	00	00	00	ES	21.6											
NICOLA	860709	1015	40	17.0	40	50	00	10	00	00								ES	124											227
NICOLA	860709	1115	38	17.0	50	40	00	05	05	00	50	00	00	00	00	00	00	ES	53.4	50	33	5	42	25	39	20	39	28	55	
NICOLA	860709	1237	36	17.0	50	20	00	30	00	00	00	00	00	00	00	20	00	ES	82.8											227
NICOLA	860709	1403	33	17.0	40	50	00	00	10	00	40	00	00	00	00	00	00	ES	43	35	26	25	18	30	21	35	21	20	12	
NICOLA	860709	1627	26	19.0	00	99	00	00	01	00								ES	45.6	20	12	25	15	22	10					
NICOLA	860709	1940	991	18.0	50	40	00	00	10	00	20	00	00	00	00	00	00	ES	38	27	57	11	59	8	48	10	24	15	42	
NICOLA	860710	1920	991		50	40	00	00	10	00	20	00	00	00	00	00	00	ES	40	9	55	1	24	3	30	9	37	33	63	
NICOLA	860714	2035	991	18.0														PS	10.7											
NICOLA	860715	1930	991	16.0														PS	10											

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SUBSTRATE BO	CO	GR	SA	SI	HP	COVER BO	CO	GR	CB	LD	OV	IV	SM	SA	DEPTHS & VELOCITIES V1	D1	V2	D2	V3	D3	V4	D4	V5	D5	COND
NICOLA	860717	2015	991	16.0														PS	10.5											
NICOLA	860718	2000	991	17.0														PS	12.3											
NICOLA	860722	0900	40	17.0														ES	195	30	51	28	46	31	48	24	53	20	45	285
NICOLA	860723	0845	38	18.0														ES	81.5											
NICOLA	860723	1655	33	20.0	00	99	00	00	01	00	00	00	00	00	00	00	50	ES	31.5											243
NICOLA	860723	1830	991	20.0	40	00	00	00	60	00	00	00	00	00	00	00	10	PS	21.3											
NICOLA	860723	1945	991															PS	15											
NICOLA	860724		36	18.0	10	75	00	00	15	00	00	00	00	00	00	00	25	ES	127	20	36	30	54	20	26	55	20	0	15	242
NICOLA	860724	1220	26	23.0	00	99	00	00	01	00	00	00	00	00	00	00	00	PS	15.3	38	15	53	18	31	12	65	28	60	15	311
NICOLA	860724	1220	26	23.0	00	99	00	00	01	00	00	00	00	00	00	00	00	ES	38											311
GUICHON	860724	1400	20	16.0	00	40	00	00	60	00	00	00	00	00	00	15	00	PS	6	25	55	33	58	27	63	17	63	45	52	496
GUICHON	860724	1400	20	19.0	05	95	00	00	00	00	05	00	00	00	00	00	05	ES	25.9	50	30	25	30	75	39	80	36	20	25	328
GUICHON	860724	1400	20	19.0	05	95	00	00	00	00	05	00	00	00	00	00	05	ES	25.9	50	30	25	30	75	39	80	36	20	25	
NICOLA	860724	1547	21	12.0	00	50	00	00	50	00	00	00	00	00	00	10	00	PS	33	50	30	55	39	45	36	40	25	20	18	295
NICOLA	860725	1412	18		00	00	95	00	05	00	00	00	00	00	00	00	05	ES	38											
NICOLA	860729	2010	991	19.0	10	60	10	00	20	00	10	20	00	00	00	00	00	PS	11	15	24	30	33	33	27	31	28	27	34	
NICOLA	860730	2030	991	19.0														PS	10											
NICOLA	860731	1945	991	20.0	00	05	05	00	90	00	00	10	00	00	00	00	10	PS	12	0	30	0	30	0	40	0	30	0	30	
NICOLA	860731	2015	991	21.0	30	30	10	00	30	00	10	10	00	00	00	00	05	PS	14	4	23	21	27	42	41	37	40	24	18	
NICOLA	860801	2030	991	22.0														PS	11											
NICOLA	860803	1525	21	20.0														PS	40											
NICOLA	860805	2000	991	23.0	25	45	10	00	20	00	10	15	00	00	00	00	00	PS	14.3	10	22	17	16	16	24	19	34	17	41	
NICOLA	860806	0800	40	21.0							50	00	00	00	00	00	10	ES	126											280
NICOLA	860806	1200	38	22.0	70	00	00	00	30	00	00	00	00	00	00	00	10	ES	80											309
NICOLA	860806	1815	18	22.0	00	95	00	00	05	00	00	00	00	00	00	00	05	PS	35.4											
NICOLA	860806	1910	26	21.0	00	60	00	00	40	00	00	00	00	00	00	00	00	PS	23.1											
NICOLA	860806	1930	991	25.0	25	45	10	00	20	00	10	15	00	00	00	00	00	PS	14	19	21	20	29	25	27	23	26	19	32	
NICOLA	860807	0645	36	20.0	50	00	00	00	50	00	50	00	00	00	00	00	10	ES	126											301
NICOLA	860807	0835	33	21.0							00	00	00	00	00	00	10	ES	48											304
GUICHON	860807	1105	20	20.0	00	50	00	00	50	00	00	00	00	00	00	00	30	PS	24											
GUICHON	860807	1205	20	22.0	25	75	00	00	00	00	25	00	00	00	00	00	00	PS	20											
NICOLA	860807	1305	21	22.0	05	10	00	00	85	00								PS	29											

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SUBSTRATE BO	CO	GR	SA	SI	HP	COVER BO	CO	GR	CB	LD	OV	IV	SM	SA	DEPTHS & VELOCITIES V1	D1	V2	D2	V3	D3	V4	D4	V5	D5	COND
NICOLA	860807	1952	991	27.0	25	45	10	00	20	00	10	15	00	00	00	00	00	PS	14											
NICOLA	860808	1930	991	25.0	25	40	10	00	20	00	10	15	00	00	00	00	00	PS	14	20	30	28	42	48	30	7	27	24	39	
NICOLA	860812	1905	991	21.0	50	40	05	05	00	00	50	00	00	00	00	00	00	ES	37.5											
NICOLA	860813	1840	991	23.0	50	40	05	05	00	00	50	00	00	00	00	00	00	ES	37.5	10	27	25	26	52	26	25	24	12	16	
NICOLA	860814	1850	991	22.0	40	60	00	00	00	00	20	20	00	00	00	00	00	ES	45	21	18	40	27	25	18	35	33	32	30	
NICOLA	860815	1845	991	21.0	60	35	00	05	00	00	25	15	00	00	00	00	00	ES	30											
NICOLA	860818	1600	40	20.0	50	30	20	00	00	00	30	10	00	00	00	00	00	ES	45											
NICOLA	860819	0730	38	20.0	60	40	00	00	00	00	50	10	00	00	00	00	00	ES	32.5											
NICOLA	860819	0930	36	18.0	50	50	00	00	00	00	30	00	00	00	00	00	00	ES	35.6											276
GUICHON	860819	1300	20	18.0	40	00	00	30	30	00	20	00	00	00	20	00	00	PS	79.1	22	42	25	46	32	57	38	36	7	27	
GUICHON	860819	1300	20	18.0	20	70	10	00	00	00	10	50	00	00	00	00	00	PS	34.6	52	18	71	27	40	30	35	33	81	27	
NICOLA	860819	1430	21	21.0	30	50	20	00	00	00	00	30	00	00	00	00	00	PS	28.8											
NICOLA	860819	1630	18	20.0	10	40	50	00	00	00	00	30	00	00	00	00	00	PS	59.4											
NICOLA	860819	1900	991	18.0	30	60	05	00	05	00	20	20	00	00	00	00	00	ES	54	15	21	20	27	10	39	15	27	5	21	
NICOLA	860820	0725	33	15.0	30	50	10	00	10	00	10	20	00	00	00	00	05	ES	77	10	19	13	15	6	20	18	26	2	14	296
NICOLA	860820	0955	26	17.0	00	30	50	00	20	00	00	20	00	00	00	00	00	PS	66.8											
NICOLA	860820	1810	991	18.0	40	30	20	00	10	00	20	10	00	00	00	00	00	ES	50	15	30	20	21	10	24	25	39	30	42	
NICOLA	860822	1345	19	20.0														ES	8											250
NICOLA	860822	1815	991	20.0	40	30	20	00	10	00	20	10	00	00	00	00	00	ES	50	15	30	20	21	10	24	25	39	30	42	291
NICOLA	860826	1710	991	21.0														ES	14	20	23	11	41	14	23	72	39	10	30	
NICOLA	860829	1005	991	18.0														ES	14											
NICOLA	860902	1240	33	19.0	20	65	10	00	05	00	10	20	00	00	00	00	05	ES	89	17	22	16	18	2	17	27	22	11	18	295
GUICHON	860902	1415	20	19.0	10	10	20	25	35	00	05	00	00	00	10	00	02	PS	74	18	31	20	39	15	31	25	45	24	48	
GUICHON	860902	1415	20	19.0	10	10	20	25	35	00	05	00	00	00	10	00	02	PS	9.2	18	31	20	39	15	31	25	45	24	48	
NICOLA	860903	0745	40	17.0	75	10	05	00	10	00	40	00	00	00	00	00	00	ES	50	9	21	7	24	6	36	4	28	11	15	291
NICOLA	860903	0915	38	18.0	70	10	05	00	10	00	30	00	00	00	00	00	00	ES	60.8	37	30	3	18	11	36	15	18	23	15	301
NICOLA	860903	1350	26	20.0	00	90	05	00	05	00	20	00	00	00	00	00	00	PS	77	45	18	45	21	70	21	70	33	45	18	
GUICHON	860903	1450	20	18.0	00	80	20	00	00	00	20	00	00	00	00	00	00	PS	56	38	15	85	24	110	33	70	36	30	27	
NICOLA	860903	1555	18	20.0	00	20	80	00	00	00	05	00	00	00	00	00	00	PS	55	66	30	60	27	52	30	34	18	25	12	
NICOLA	860904	0800	36	16.0	70	25	00	00	05	00	30	00	00	00	00	00	00	ES	52	2	39	12	36	14	24	23	45	20	36	315
GUICHON	860916	1215	20	12.0	20	05	20	40	15	00	10	00	00	00	20	00	00	PS	88	30	43	25	34	47	70					
GUICHON	860916	1240	20	12.0	05	05	05	75	10	00	00	00	00	00	25	00	00	PS	8	25	48	26	70							

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SUBSTRATE BO	CO	GR	SA	SI	HP	COVER BO	CO	GR	CB	LD	OV	IV	SM	SA	DEPTHS & VELOCITIES V1	D1	V2	D2	V3	D3	V4	D4	V5	D5	COND
GUICHON	860916	1325	20	12.0	10	70	10	00	10	00	00	05	00	00	00	00	05	PS	70	95	27	90	27	60	18	50	27	30	30	
NICOLA	860916	1355	21	14.0	10	60	05	00	25	00	05	05	00	00	00	00	00	PS	72	25	22	43	32	20	30	28	29	63	23	
NICOLA	860918	0925	40	11.0	50	35	05	00	10	00	30	00	00	00	00	00	00	ES	94	80	12	50	16	0	13	10	39	20	24	
NICOLA	860918	1130	38	13.0	60	15	05	00	20	00	40	00	00	00	00	00	00	ES	62	20	30	3	36	7	21	2	21	35	28	
NICOLA	860919	0935	36	12.0	35	20	00	00	45	00	20	20	00	00	00	00	00	ES	82	34	42	25	41	30	40	13	57	22	44	
NICOLA	860919	1305	33	13.0	10	75	10	00	05	00	05	30	00	00	00	00	00	ES	80	20	17	28	24	27	18	28	21	31	21	
NICOLA	860925	1350	31															MT8	24.5											
NICOLA	860925	1530	28P															MT6	23											
NICOLA	860926	1245	31	9.0														MT4	21.5											
NICOLA	860926	1400	28	9.0														MT4	22.5											
NICOLA	860926	1445	26															MT4	22											
GUICHON	860926	1520	20	9.0														MT4	22											
NICOLA	860926	1600	18	9.0														MT2	21											
GUICHON	860930	1220	20	9.0	20	05	20	40	15	00	10	00	00	00	20	00	05	PS	16	14	45	20	30	15	62	15	63	13	40	
GUICHON	860930	1220	20	9.0	10	70	10	00	10	00	00	05	00	00	00	00	05	PS	70											
NICOLA	860930	1220	21	9.0	10	60	05	00	25	00	05	05	00	00	00	00	00	PS	72	32	27	50	30	40	30	73	18	66	21	
NICOLA	861001	1345	40	11.0	45	35	05	00	15	00	30	00	00	00	00	00	00	ES	94	19	30	22	15	27	41	31	15	26	15	
NICOLA	861002	1200	28P	7.5														MT27	20											
NICOLA	861003	0800	33	7.5	10	75	10	00	05	00	05	30	00	00	00	00	00	ES	104	22	26	30	30	18	17	30	22	42	26	
NICOLA	861003	1420	38	11.0	60	15	05	00	20	00	40	00	00	00	00	00	00	ES	58	0	30	5	24	25	45	2	33	22	21	
NICOLA	861004	0705	36	8.0	45	30	00	00	25	00	20	20	00	00	00	00	00	ES	60	18	30	10	30	20	30	10	27	11	45	
NICOLA	861010	1450	29	9.0														MT4	25											
NICOLA	861010	1515	28P	8.5														MT6	25											
NICOLA	861010	1530	29	9.0														MT4	25											
NICOLA	861014	0945	40	5.5	50	35	05	00	10	00	30	00	00	00	00	00	00	ES	76	22	33	23	41	9	30	11	21	18	18	
NICOLA	861014	1130	38	6.0	60	15	05	00	20	00	40	00	00	00	00	00	00	ES	58	13	18	3	14	9	27	0	36	3	30	
NICOLA	861015	0935	36	8.5	40	35	00	00	25	00	20	25	00	00	00	00	00	ES	56	14	33	25	27	34	42	13	30	0	21	
NICOLA	861015	1155	33	7.5	10	75	10	00	05	00	05	35	00	00	00	00	00	ES	106	14	18	17	22	15	16	2	16	7	16	
GUICHON	861016	1145	20	7.0														PS	96											
NICOLA	861016	1145	21	7.0	10	65	15	00	10	00	05	05	00	00	00	00	00	PS	72	42	28	23	24	38	25	22	15	32	16	
GUICHON	861017	1130	20	6.0														MT1	22											
NICOLA	861017	1130	21	7.0														MT4	22											

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SUBSTRATE BO	CO	GR	SA	SI	HP	COVER BO	CO	GR	CB	LD	OV	IV	SM	SA	DEPTHS & VELOCITIES V1	D1	V2	D2	V3	D3	V4	D4	V5	D5	COND
NICOLA	861017	1225	26	8.0														MT5	23											
NICOLA	861022	1100	28P	8.5														MT31	22											
NICOLA	861022	1540	29	7.0														MT10	26.5											
NICOLA	861024	1425	18	7.0														MT10	24.5											
NICOLA	861024	1545	21	7.0														MT10	24											
NICOLA	861024	1620	26	7.0														MT7	24											
NICOLA	861028	1510	33	8.0	25	75	00	00	05	00	10	20	00	00	00	00	00	ES	56	30	30	45	33	33	31	43	21	45	33	
NICOLA	861029	1310	40	6.5	30	60	00	00	10	00	15	25	00	00	00	00	00	ES	70	55	26	12	17	10	26	35	19	43	24	
NICOLA	861030	1200	38	8.0	40	45	00	00	15	00	20	10	00	00	00	00	00	ES	70	25	33	27	30	7	30	2	39	37	27	
NICOLA	861030	1340	36	8.0	40	50	00	00	10	00	20	20	00	00	00	00	00	ES	50	34	33	45	36	10	34	63	29	14	45	
GUICHON	861031	1345	20	6.5	05	05	05	75	10	00	10	00	00	00	20	00	00	PS	8	18	41	6	44	6	30	7	60	16	42	
GUICHON	861031	1345	20	6.5	00	70	15	00	15	00	00	05	00	00	00	00	05	PS	75	23	24	25	24	29	12	38	21	57	28	
NICOLA	861031	1345	21	7.0	10	60	10	00	20	00	05	05	00	00	00	00	00	PS	72	30	23	33	30	50	31	29	27	70	19	
NICOLA	861106	1130	31	5.0														MT10	23											
NICOLA	861106	1310	18															MT7	23											
NICOLA	861106	1430	21															MT7	23											
NICOLA	861106	1500	22															MT6	23											
NICOLA	861112	1320	28P	6.0														MT27	23											
NICOLA	861113	0850	28P	6.0														MT27	19.5											
NICOLA	861126	1500	28P															MT30	24											
NICOLA	861127	1120	28P	6.5														MT31	20.5											
NICOLA	870203	0830	28P	6.0														MT10												
NICOLA	870203	1030	28P	6.0														MT14												
NICOLA	870203	1130	28P	6.0														MT6												
NICOLA	870203	1305	28P	6.0														MT21												
NICOLA	870203	1445	28P	6.0														MT6												
NICOLA	870204	0925	28P	6.0														MT14												
NICOLA	870204	1000	28P	6.0														MT6												
NICOLA	870204	1040	28P	6.0														MT21												
NICOLA	870225	1500	40	1.0	40	30	5		15		20	20						ES	127	18	20	32	34	12	18	30	24	3	18	278

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SUBSTRATE BO	CO	GR	SA	SI	HP	COVER BO	CO	GR	CB	LD	OV	IV	SM	SA	DEPTHS & VELOCITIES V1	D1	V2	D2	V3	D3	V4	D4	V5	D5	COND
NICOLA	870226	1030	38	1.5	30	40	10		20		20	20						ES	109	2	30	10	40	7	24	2	14	2	28	273
NICOLA	870226	1505	36	3.5	30	50	10		10		20	30						ES	150	16	30	20	48	16	36	13	22	10	34	252
NICOLA	870227	0930	26	0.5	20	50	20		10		10	30						ES	32	43	18	18	28	18	30	9	36	18	30	268
NICOLA	870227	1030	20	1.0	30	50	20				20	20						ES	119	32	18	5	18	6	18	11	20	12	16	489
NICOLA	870227	1200	21	2.0	20	30	20	10	20		10	10						ES	106	24	16	39	38	21	20	28	18	2	30	280
NICOLA	870227	1400	18	2.5		10	20	20	50		5					20	20	ES	147	7	36	0	62	2	48	5	30	0	44	257
NICOLA	880127	0855	28P	6.0														MT6											
NICOLA	880127	0915	28P	6.0														MT4											
NICOLA	880127	0930	28P	7.0														MT7											
NICOLA	880127	0945	28P	7.0														MT9											
NICOLA	880218	0855	28P	7.0														MT7											
NICOLA	880218	0940	28P	7.0														MT12											
NICOLA	880218	1030	28P	7.0														MT12											
NICOLA	880218	1055	28P	7.0														MT6											
NICOLA	880218	1120	28P	7.0														MT12											
NICOLA	880223	0830	28P	5.0														MT12											
NICOLA	880223	0930	28P	5.0														MT6											
NICOLA	880223	1000	28P	7.5														MT12											
NICOLA	880223	1030	28P	7.5														MT12											
NICOLA	880223	1130	28P	8.0														MT7											
NICOLA	880308	1530	40	6.0	70	30					40	10						ES	108	17	14	40	10	8	9	1	6	13	7	231
NICOLA	880309	1030	38	6.0	50	20	10	10	10		30	10						ES	80	2	12	9	13	13	11	0	13	23	11	233
NICOLA	880309	1320	36	6.0	70	20			10		40	10						ES	100	12	10	16	12	10	14	19	14	13	11	253
NICOLA	880309	1510	27	6.0	30	30	30	10			20	10						ES	77	21	9	33	19	40	15	38	10	38	20	167
NICOLA	880309	1620	22	6.0		40	30		30		20							ES	69	12	14	48	15	46	10	23	14	20	14	266

Table 2. Fish catch using electrofishing, beach seining, pole seining and minnow trapping at sample stations on the Nicola River system during 1986, 1987 and 1988. Data include date, Pacific Standard Time, station number, and water temperature (°C). Population estimates for chinook (CH), coho (CO), rainbow trout (RBT) are the result of multiple pass Zippin population estimate calculations. Total site catch for chinook (CH), coho (CO), rainbow trout (RBT), mountain whitefish (MWF), Dolly Varden char (DV), lamprey (LMP), cyprinids - other than suckers (CYP), suckers (SU), all other species (OTH), is the total catch of 3 passes at the site from electrofishing, beach seining, and pole seining and the total of all traps when minnow trapping. The population densities per square meter for chinook (CH), coho (CO), rainbow trout (RBT) are from the Zippin population estimates divided by the sample area. Zippin population density estimates have 95 % confidence intervals. Minimum population density estimates do not have confidence intervals.

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SM	POP'N EST CH	POP'N EST CO	POP'N EST RBT	TOTAL SITE CATCH CH	TOTAL SITE CATCH CO	TOTAL SITE CATCH RBT	TOTAL SITE CATCH MWF	TOTAL SITE CATCH DV	TOTAL SITE CATCH LMP	TOTAL SITE CATCH CYP	TOTAL SITE CATCH SU	TOTAL SITE CATCH OTH	POPULATION CH	POPULATION CO	DENSITY RBT
NICOLA	860114	1020	21	0.5	ES			25			25									.25±.01
NICOLA	860114	1215	22	0.5	ES				1		24							.03		.60
NICOLA	860115	0830	21		MT6				16		9				1	1				
NICOLA	860115	0910	22		MT6						2					1				
GUICHON	860116		20	0.0	ES			13	6		13							.15		.34±.05
GUICHON	860116		20	0.0	ES	3.1		14	3		13							.08+.08		.34±.05
GUICHON	860116		20	0.0	ES			9.6	1		9							.03		.24±.06
NICOLA	860116	0930	1	0.0	ES						1									.02
NICOLA	860116	0930	1	0.0	ES						1						15			.03
NICOLA	860116	1200	31		MT8				22	22	48						2			
NICOLA	860116	1245	1	0.0	MT6						1									
NICOLA	860116	1345	7	0.0	MT6					1										
NICOLA	860116	1400	39	0.0	MT8						8									
NICOLA	860116	1530	40		MT8				9											
NICOLA	860118	1000	29	1.0	MT6															
NICOLA	860118	1000	29C	5.0	MT8				11	1	2				1					
NICOLA	860118	1410	29C	2.0	ES				5		3				1					
NICOLA	860218	1600	31	6.0	MT20															
NICOLA	860218	1650	32	1.0	MT10				11	112	3	2				3				
NICOLA	860219	0915	28P	2.0	MT14				18	6	10	1								
NICOLA	860219	1305	31	6.0	MT7				3	25	40	2				2				
NICOLA	860219	1515	18		MT16				10	19	1					4				
NICOLA	860220	0845	28	4.0	MT20				9	9	10	1								
NICOLA	860220	0955	32		MT9				4	74	9					21				
NICOLA	860220	1315	18		MT10				8	2						1				
NICOLA	860220	1515	31		MT20				1	20	26				3	2				
GUICHON	860224	1000	20	1.5	ES	1.3		26	1		11	1						.03±.09		.64±1.85
GUICHON	860224	1100	20	1.0	ES			11	1		10			1				.03		.27±.09
NICOLA	860225	1025	28P	6.0	MT15				69	50	82									
NICOLA	860226	0850	28P	6.0	MT15				34	44	45									
NICOLA	860318	1045	33	5.0	ES			22	2		22					6		.08		.89±.07
NICOLA	860318	1255	27	4.0	ES				2		17			1		30	1	.03		.24±.01

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SM	POP'N EST CH	CO	RBT	TOTAL SITE CATCH CH	CO	RBT	MWF	DV	LMP	CYP	SU	OTH	POPULATION CH	CO	DENSITY RBT
NICOLA	860318	1435	34	6.0	ES			20			19			22		41				.29±.03
NICOLA	860318	1615	38	6.0	ES	4.5		57	4		53	1		22		14		.09±.06		1.10±.14
NICOLA	860319	1000	40	6.0	ES			15			7			2		16				.41±1.34
NICOLA	860319	1115	36	5.5	ES			24	1		24			5		4		.02		.52±.03
NICOLA	860402	1045	40	6.5	ES			23	1		22			16		34		.01		.31±.04
NICOLA	860402	1335	33	6.0	ES			25			23			8		32				.27±.06
NICOLA	860402	1530	27	6.5	ES	2.2		20	2		19			1		30	3	.02±.01		.19±.03
NICOLA	860403	1120	38	6.0	ES	6		28	4		27			23		11		.13±.24		.59±.06
NICOLA	860403	1400	36	6.0	ES			31			29				1	6				.32±.05
NICOLA	860403	1550	34	6.0	ES			19	4		19			11	44	4	1	.11		.50±.01
NICOLA	860415	1350	38	7.0	ES	13		27	12		21			27			17	.24±.07		.50±.25
NICOLA	860415	1555	33	7.0	ES			22	1		22				30			.01		.15±.01
NICOLA	860416	1100	40	7.0	ES			31	5		28			14	18	14		.05		.28±.05
NICOLA	860416	1320	36	7.0	ES	4.4		130	3		22			26	5	1		.05±.03		1.62±12.50
NICOLA	860416	1535	27	6.5	ES	15		8.1	14		8						37	.15±.03		.08±.01
NICOLA	860417	1420	34	9.0	ES	11		17	10		16			31	48	3		.12±.04		.18±.02
NICOLA	860501	1615	26	8.5	ES	36		7	31		7			21	10	1		1.62±.42		.32±.01
GUICHON	860502	0815	20	10.0	ES	28		37	24		34			5	2	3		.71±.22		.93±.13
NICOLA	860502	1055	18	10.0	ES	15			14		3			1	1		1	.23±.06		.05
NICOLA	860502	1330	33	9.0	ES	27		17	26		16				42	7		.33±.02		.21±.04
NICOLA	860502	1515	36	9.0	ES			8	1		8			2	7	2		.01		.10±.01
NICOLA	860502	1630	38	9.5	ES			16	1		16			3	2	1		.02		.27±.01
NICOLA	860502	1900	21	8.0	ES	12		3.1	12		3			6	2		1	.21±.01		.05±.01
NICOLA	860503	0815	40	9.0	ES	5.2		15	5		13			3	30			.07±.02		.21±.04
NICOLA	860503	1255	991	10.0	ES	23		30	20	1	29			2	16	2		.65±.24	.03	.82±.06
NICOLA	860514	0750	26	6.0	ES	27	14	3.1	27	14	3				1			1.42±.02	.74±.02	.16±.04
NICOLA	860514	0930	36	6.0	ES				3						1			.06		
NICOLA	860514	1030	38	7.0	PS				3						2			.30		
NICOLA	860514	1030	38	7.0	PS				1						1			.10		
NICOLA	860514	1130	40	7.5	ES			5	3		5			13	18	1		.05		.08±.01
NICOLA	860514	1130	40	7.5	PS															
GUICHON	860515	0745	20	9.0	ES	268		32	257		30			1	1			12.00±.43		1.50±.23

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SM	POP'N EST CH	POP'N EST CO	POP'N EST RBT	TOTAL SITE CATCH CH	TOTAL SITE CATCH CO	TOTAL SITE CATCH RBT	TOTAL SITE CATCH MWF	TOTAL SITE CATCH DV	TOTAL SITE CATCH LMP	TOTAL SITE CATCH CYP	TOTAL SITE CATCH SU	TOTAL SITE CATCH OTH	POPULATION CH	POPULATION CO	DENSITY RBT
NICOLA	860515	0930	21	6.0	PS															
NICOLA	860515	0930	36	6.0	PS	15			7	1							1	.31±1.01	.02	
NICOLA	860515	1000	18	9.0	PS				4			1			1			.20		
NICOLA	860515	1000	18	9.0	PS				1						3			.07		
NICOLA	860515	1000	18	9.0	PS	3.8			3									.10±.13		
NICOLA	860515	1215	33	9.0	ES	27			20		2				13			.33±.21		.03
NICOLA	860515	1935	991	10.0	ES	31		59	17		45				7	2		.65±1.02		1.23±.48
NICOLA	860516	2230	991	8.0	ES			19		5	19								.25	.96±.06
NICOLA	860517	2030	991	12.0	ES	3.8		25	3	2	23				1	1		.10±.13	.05	.63±.12
NICOLA	860518	2025	991	12.0	ES			17	4	3	13				3	3	1	.10	.08	.43±.31
NICOLA	860521	2335	991	8.0	PS				2		7			1	10			.05		.18
NICOLA	860523	0015	991	10.0	PS				4		6				5	2		.10		.15
NICOLA	860523	2335	991	8.0	PS				1		6				4		1	.03		.15
NICOLA	860524	2320	991	12.0	PS					1	5				4				.03	.13
NICOLA	860525	2105	991	13.0	PS						5				30		2			.13
NICOLA	860526	1355	18	12.0	PS				14						18	7	7	.41		
GUICHON	860526	1520	20		ES			5.9	28		5				7		1	.82		.17±.12
GUICHON	860527	0800	20	10.0	ES	128			108	1	1				1			6.41±1.05	.05	.05
NICOLA	860527	0915	21		PS	12		6.6	11		6	1		1	49			.96±.23		.54±.22
NICOLA	860528	1040	33	8.5	PS	76		15	76		7				14			2.74		.54±1.74
NICOLA	860528	1140	36		PS	20		9.7	17		8				70		1	.99±.37		.49±.32
NICOLA	860528	1530	991	11.0	PS	3.8		33	3		27	1			38		1	.29±.39		2.44±.89
NICOLA	860528	1625	40	11.0	PS	5.2		30	5	1	29				5			.58±.15	.11	3.34±.32
NICOLA	860528	1700	38	11.0	PS				2		12				27			.40		2.40
NICOLA	860602	2100	991	13.0	PS	39		11	22		10				2			1.63±2.09		.46±.14
NICOLA	860603	2210	991	12.0	PS	42			34		6				13			1.76±.64		.25±.04
NICOLA	860604	2400	991	12.0	PS	37		6.1	19		6				11	1		1.56±2.64		.26±.04
NICOLA	860605	2245	991	14.0	PS	39			22	2	2				2			1.63±2.09	.08	.08
NICOLA	860606	2200	991	13.0	PS				14	2	9				12			.47	.07	.30
NICOLA	860607	2245	991	13.0	PS			2.2	15	1	2	4			12			.54	.04	.08±.05
NICOLA	860608	2045	991	13.0	PS			6	22	3	4	5			17			.61	.08	.17±.32
NICOLA	860609	2230	991	14.0	PS	6.1			6	5	3	4		1	46	4		.17±.03	.14	.08
NICOLA	860610		21	14.0	PS				57						13			2.74		

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SM	POP'N EST CH	CO	RBT	TOTAL SITE CATCH CH	CO	RBT	MWF	DV	LMP	CYP	SU	OTH	POPULATION CH	CO	DENSITY RBT
NICOLA	860610	1400	18	13.0	PS	33			31		2				1			1.84±.27		.11
GUICHON	860610	1500	20	16.0	ES										10	3	2			
NICOLA	860610	1630	26	14.0	PS	47			47	6	2				21			3.93±.06	.50	.17
NICOLA	860610	2055	991	15.0	PS			4.4	2	1	4	1			5	1		.05	.03	.11±.06
NICOLA	860611	0900	40	12.0	PS	4.4			4		3							.44±.22		.30
NICOLA	860611	0950	38	13.0	PS	9.7			7		2				3			1.10±1.29		.23
NICOLA	860611	1030	36	13.0	PS	7.1		9.2	7		9				12			.89±.10		1.15±.15
NICOLA	860611	1120	33	12.0	PS	48			42		1				15			4.31±.20		.10
NICOLA	860611	2045	991	14.0	PS				1	1	1	2			42			.03	.03	.03
GUICHON	860612	0915	20	12.0	ES				16		3				8	7		1.20		.23
NICOLA	860612	2025	991	16.0	PS	11			9		1	1			32			.30±.23		.03
NICOLA	860613	2040	991	16.0	PS				7		3	1			46	1		.18		.08
NICOLA	860614	2240	991	14.0	PS	10			10						7			.27±.03		
NICOLA	860615	2050	991	14.0	PS	54		9.6	31	4	9				58			1.40±1.41	.10	.25±.06
NICOLA	860616	2150	991	15.0	PS	23			17	1	2				15			.61±.43	.03	.05
NICOLA	860617	2150	991	13.0	PS	15	2.2		14	2	2				11			.40±.11	.06	.05
NICOLA	860618	2035	991	15.0	PS	45			21		1				19			1.18±2.20		.03
NICOLA	860619	2130	991	13.0	PS	23	5.2		21	5	2				4	3	6	.65±.13	.15±.04	.06
NICOLA	860620	2125	991	13.0	PS	46	6	5.9	45	4	5				7	6	1	1.30±.06	.17±.33	.17±.12
NICOLA	860621	2040	991	15.0	PS	34			32						1	3	1	.98±.15		
NICOLA	860622	2005	991	14.0	PS	49			34						6	1	1	1.39±.83		
GUICHON	860623		20		ES				1						6	4		.02		
GUICHON	860623		20	16.0	PS	58			42						2	5		5.90		
NICOLA	860623	2015	991	15.0	PS	68			33			1			21	1		1.88±2.59		
NICOLA	860624		36	16.0	PS	2.2			2						12			.19		
NICOLA	860624		40	16.0	PS				1		1				2			.03		.03
NICOLA	860624	1430	33	17.0	PS	22			20									.89±.24		
NICOLA	860624	1520	18		PS	12			11			6	5					.42±.15		
GUICHON	860624	1605	20	18.0	ES	5			5						2			.27±.02		
GUICHON	860624	1605	20	18.0	PS				1									.03		
NICOLA	860624	1640	26	18.0	ES	14			14			2			13			1.06±.06		
NICOLA	860624	2220	991		PS	56		6	51	2	6				7	4	4	1.56±.23	.06	.17±.01

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SM	POP'N EST CH	CO	RBT	TOTAL SITE CATCH CH	CO	RBT	MWF	DV	LMP	CYP	SU	OTH	POPULATION CH	CO	DENSITY RBT
NICOLA	860625	0800	38	15.0	ES	2.2		3.8	2		3			3	8			.07±.05		.13±.18
NICOLA	860625	0840	40	16.0	PS	3.8		7.7	3		6				11	1		.07±.09		.13±.13
NICOLA	860625	2020	991		PS	63			60		1				7	5		1.74±.13		.03
NICOLA	860626	2025	991		PS	65			56		1				11	3		2.17±.44		.03
NICOLA	860627	2030	991	16.0	PS				37			1			9			1.23		
NICOLA	860628	2015	991	16.0	PS				17						1	1		3.21		
NICOLA	860630	2100	991	17.0	PS				10									1.11		
NICOLA	860701	1945	991	17.0	PS	5			5						5			.73±.06		
NICOLA	860702	1925	991	17.0	ES	3			3					2	3	2	1	.22±.05		
NICOLA	860703		991	17.0	PS	11			11						1	1		.87		
NICOLA	860704	1945	991	15.0	PS	15			7									1.15±3.71		
NICOLA	860708	1400	18	16.0	ES				1						2			.03		
GUICHON	860708	1516	20	12.0	PS				5		3			2	12			.04		.02
GUICHON	860708	1606	20	12.0	ES	39			37		3				7			.23±.02		.02
NICOLA	860708	1646	21	12.0	ES					1									.05	
NICOLA	860709	1015	40	17.0	ES	5			5					3	5			.04±.01		
NICOLA	860709	1115	38	17.0	ES			3.1	3	1	3			10	3			.06	.02	.06±.01
NICOLA	860709	1237	36	17.0	ES				12		1			2	2			.14		.01
NICOLA	860709	1403	33	17.0	ES	38	3.1		36	3	1				12			.89±.11	.07±.02	.02
NICOLA	860709	1627	26	19.0	ES	11			6						23			.25±.70		
NICOLA	860709	1940	991	18.0	ES	8.4			5					9	2	1		.22±.52		
NICOLA	860710	1920	991		ES				2		1			3	11	1		.05		.03
NICOLA	860714	2035	991	18.0	PS				4	1								.37	.09	
NICOLA	860715	1930	991	16.0	PS	1.2			1									.12±.25		
NICOLA	860717	2015	991	16.0	PS					2					26				.19	
NICOLA	860718	2000	991	17.0	PS		3.1		1	3					9			.08	.25±.06	
NICOLA	860722	0900	40	17.0	ES	21		7.7	20		6			14	34			.11±.02		.04
NICOLA	860723	0845	38	18.0	ES	12			11						3			.14±.03		
NICOLA	860723	1655	33	20.0	ES	17			16					6	11			.53±.07		
NICOLA	860723	1830	991	20.0	PS				1						8			.05		
NICOLA	860723	1945	991		PS															
NICOLA	860724		36	18.0	ES	38		23	35		21			11	13			.30±.05		.18±.04

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SM	POP'N EST CH	CO	RBT	TOTAL SITE CATCH CH	CO	RBT	MWF	DV	LMP	CYP	SU	OTH	POPULATION CH	CO	DENSITY RBT
NICOLA	860724	1220	26	23.0	PS						3				9					.20
NICOLA	860724	1220	26	23.0	ES						1		5	50						.03
GUICHON	860724	1400	20	16.0	PS				44		1					1		7.33		.17
GUICHON	860724	1400	20	19.0	ES	11			11		3				7	1		.44±.06		.12
GUICHON	860724	1400	20	19.0	ES	11			4		1				12			.15		.04
NICOLA	860724	1547	21	12.0	PS	5.9		7.4	5		7							.18±.13		.22±.06
NICOLA	860725	1412	18		ES				1		1				3			.03		.03
NICOLA	860729	2010	991	19.0	PS				1	1						1		.09		.09
NICOLA	860730	2030	991	19.0	PS				2		1				1		1	.20		.10
NICOLA	860731	1945	991	20.0	PS										9	1				
NICOLA	860731	2015	991	21.0	PS				2		2				2			.14		.14
NICOLA	860801	2030	991	22.0	PS	5.2			5						3	1		.47±.13		
NICOLA	860803	1525	21	20.0	PS											3				
NICOLA	860805	2000	991	23.0	PS				5						2			.35		
NICOLA	860806	0800	40	21.0	ES	14		35	11		33		2			1	15	.11±.06		.28±.04
NICOLA	860806	1200	38	22.0	ES						1		6	2						.01
NICOLA	860806	1815	18	22.0	PS	5.9			5		1				1			.17±.12		.03
NICOLA	860806	1910	26	21.0	PS			12	25		10				7			1.10		.51±.26
NICOLA	860806	1930	991	25.0	PS	3.1			3		2				6			.22		.14
NICOLA	860807	0645	36	20.0	ES	14		22	12		20		20	2				.11±.05		.17±.04
NICOLA	860807	0835	33	21.0	ES	3.1		31	3		28		19					.06±.01		.64±.12
GUICHON	860807	1105	20	20.0	PS	30			20		1				1			1.25±1.08		.04
GUICHON	860807	1205	20	22.0	PS			27	3		13				1			.15		1.33±2.93
NICOLA	860807	1305	21	22.0	PS				1		12				2			.03		.41
NICOLA	860807	1952	991	27.0	PS			2.2			2				1					.16±.11
NICOLA	860808	1930	991	25.0	PS				5		2							.36		.14
NICOLA	860812	1905	991	21.0	ES			4	3		4		1			7		.08		.11±.01
NICOLA	860813	1840	991	23.0	ES						1		1			3				.03
NICOLA	860814	1850	991	22.0	ES				1		7		7			9	1	.02		.16
NICOLA	860815	1845	991	21.0	ES			16			7				7	1	1			.53±2.11
NICOLA	860818	1600	40	20.0	ES			17	2	2	16					11		.04	.04	.37±.05
NICOLA	860819	0730	38	20.0	ES	11		9.7	11	1	7				5	1		.34±.02	.03	.30±.35

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SM	POP'N EST CH	POP'N EST CO	POP'N EST RBT	TOTAL SITE CATCH CH	TOTAL SITE CATCH CO	TOTAL SITE CATCH RBT	TOTAL SITE CATCH MWF	TOTAL SITE CATCH DV	TOTAL SITE CATCH LMP	TOTAL SITE CATCH CYP	TOTAL SITE CATCH SU	TOTAL SITE CATCH OTH	POPULATION CH	POPULATION CO	DENSITY RBT
NICOLA	860819	0930	36	18.0	ES	21		29	20		27			7		3		.58±.06		.81±.12
GUICHON	860819	1300	20	18.0	PS	205			70	1	4				3			2.59±4.44	.01	.05
GUICHON	860819	1300	20	18.0	PS	29		43	24		39	1			1			.84±.33		1.24±.21
NICOLA	860819	1430	21	21.0	PS			22	1		20				18			.03		.78±.22
NICOLA	860819	1630	18	20.0	PS			17	3		13				67	5		.05		.29±.29
NICOLA	860819	1900	991	18.0	ES			72	3		16			1	11	2		.06		1.34±8.69
NICOLA	860820	0725	33	15.0	ES	43		144	42		90			24	22	3		.56±.03		1.90±.92
NICOLA	860820	0955	26	17.0	PS			37	2		26	1			75	2		.03		.56±.38
NICOLA	860820	1810	991	18.0	ES	8.7		11	8		6			2	10		1	.17±.06		.23±.64
NICOLA	860822	1345	19	20.0	ES				6	9	1							.75	1.13	.13
NICOLA	860822	1815	991	20.0	ES						4			2	1					.08
NICOLA	860826	1710	991	21.0	ES						11			1	4	1				.79
NICOLA	860829	1005	991	18.0	ES	5		12	5		11			2	5			.36±.03		.88±.33
NICOLA	860902	1240	33	19.0	ES			31			30			8	4	1				.35±.04
GUICHON	860902	1415	20	19.0	PS	64		6	62		4	3						.86±.05		.08±.16
GUICHON	860902	1415	20	19.0	PS	65	3.8	6	65	3	4							7.08±.09	.42±.56	.65±1.26
NICOLA	860903	0745	40	17.0	ES	14		23	14	1	20			6	26	1		.28±.02	.02	.47±.17
NICOLA	860903	0915	38	18.0	ES	10		9.7	10		8			1	8			.17±.01		.16±.11
NICOLA	860903	1350	26	20.0	PS				9		86				120	10		.12		1.12
GUICHON	860903	1450	20	18.0	PS	33		28	28		26							.59±.19		.51±.10
NICOLA	860903	1555	18	20.0	PS			5			5				16	1				.09±.01
NICOLA	860904	0800	36	16.0	ES	17		14	16		11			1	2			.34±.08		.26±.16
GUICHON	860916	1215	20	12.0	PS	25			23		5							.29±.07		.06
GUICHON	860916	1240	20	12.0	PS	62			52	3								7.80±1.94	.38	
GUICHON	860916	1325	20	12.0	PS	6.6			25	6		15				1		.09±.04		.36±.49
NICOLA	860916	1355	21	14.0	PS	5			5		26				1	2		.07±.01		.36
NICOLA	860918	0925	40	11.0	ES	35		42	34		31				17			.37±.02		.45±.23
NICOLA	860918	1130	38	13.0	ES	33		13	24		12			2	12			.52±.31		.20±.04
NICOLA	860919	0935	36	12.0	ES	31		19	30		15			1		3		.38±.04		.23±.14
NICOLA	860919	1305	33	13.0	ES	26		38	23		34			7	20	4		.33±.09		.47±.09
NICOLA	860925	1350	31		MT8				27	14					1	1				
NICOLA	860925	1530	28P		MT6				9		6				6	4				

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SM	POP'N EST CH	CO	RBT	TOTAL SITE CATCH CH	CO	RBT	MWF	DV	LMP	CYP	SU	OTH	POPULATION DENSITY CH	CO	RBT
NICOLA	860926	1245	31	9.0	MT4				6		6									
NICOLA	860926	1400	28	9.0	MT4				7	3	13									
NICOLA	860926	1445	26		MT4										1	1				
GUICHON	860926	1520	20	9.0	MT4						2				1	3				
NICOLA	860926	1600	18	9.0	MT2				3		2						1			
GUICHON	860930	1220	20	9.0	PS	8.1			7		2							.50±.28		.13
GUICHON	860930	1220	20	9.0	PS	5.9		35	5		30							.08±.06		.50±.15
NICOLA	860930	1220	21	9.0	PS			46	1		38					3		.01		.64±.20
NICOLA	861001	1345	40	11.0	ES	11		26	11		17				7	1		.12±.01		.28±.28
NICOLA	861002	1200	28P	7.5	MT27				125	9	42	2			34	16				
NICOLA	861003	0800	33	7.5	ES	80		59	78		56			1	6	6		.77±.04		.56±.04
NICOLA	861003	1420	38	11.0	ES	6.6		17	6		14			1	1			.11±.05		.30±.16
NICOLA	861004	0705	36	8.0	ES	31		38	30		38			4	3	3	2	.51±.03		.64±.02
NICOLA	861010	1450	29	9.0	MT4				1											
NICOLA	861010	1515	28P	8.5	MT6				13	1	19									
NICOLA	861010	1530	29	9.0	MT4				10		16									
NICOLA	861014	0945	40	5.5	ES	22		23	21		23			2	2			.29±.03		.31±.02
NICOLA	861014	1130	38	6.0	ES	34		22	32		21			1	1			.59±.09		.37±.03
NICOLA	861015	0935	36	8.5	ES	37		18	31		17					1		.66±.20		.32±.05
NICOLA	861015	1155	33	7.5	ES	47		32	46		31			4	7	5		.45±.03		.30±.03
GUICHON	861016	1145	20	7.0	PS															
NICOLA	861016	1145	21	7.0	PS						7									.10
GUICHON	861017	1130	20	6.0	MT1				3		2									
NICOLA	861017	1130	21	7.0	MT4				3	1	1					4	1			
NICOLA	861017	1225	26	8.0	MT5				3		6									
NICOLA	861022	1100	28P	8.5	MT31				195	22	41									
NICOLA	861022	1540	29	7.0	MT10				25	1	46	1				1				
NICOLA	861024	1425	18	7.0	MT10				4		5						1			
NICOLA	861024	1545	21	7.0	MT10				1		2				1	1				
NICOLA	861024	1620	26	7.0	MT7						2									
NICOLA	861028	1510	33	8.0	ES			17	5		15					1		.09		.30±.09
NICOLA	861029	1310	40	6.5	ES	11		26	11	1	24			2	2			.16±.02	.01	.37±.08

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SM	POP'N EST CH	POP'N EST CO	POP'N EST RBT	TOTAL SITE CATCH CH	TOTAL SITE CATCH CO	TOTAL SITE CATCH RBT	TOTAL SITE CATCH MWF	TOTAL SITE CATCH DV	TOTAL SITE CATCH LMP	TOTAL SITE CATCH CYP	TOTAL SITE CATCH SU	TOTAL SITE CATCH OTH	POPULATION DENSITY CH	POPULATION DENSITY CO	DENSITY RBT
NICOLA	861030	1200	38	8.0	ES	9.6		19	9		18			1				.14±.03		.27±.04
NICOLA	861030	1340	36	8.0	ES	14		26	13		25							.27±.04		.52±.05
GUICHON	861031	1345	20	6.5	PS				2									.02		
GUICHON	861031	1345	20	6.5	PS						2									.03
NICOLA	861031	1345	21	7.0	PS			2.2			2									.03±.02
NICOLA	861106	1130	31	5.0	MT10				36	9	42	1								
NICOLA	861106	1310	18		MT7				32	43	7				19	8	2			
NICOLA	861106	1430	21		MT7				11	3	3					12				
NICOLA	861106	1500	22		MT6				2		4									
NICOLA	861112	1320	28P	6.0	MT27				200	24	4									
NICOLA	861113	0850	28P	6.0	MT27				123	8	2									
NICOLA	861126	1500	28P		MT30				429	51	35									
NICOLA	861127	1120	28P	6.5	MT31				195	30	16									
NICOLA	870203	0830	28P	6.0	MT10				58	4	7									
NICOLA	870203	1030	28P	6.0	MT14				25	4										
NICOLA	870203	1130	28P	6.0	MT6				23	6	10									
NICOLA	870203	1305	28P	6.0	MT21				147	13	5									
NICOLA	870203	1445	28P	6.0	MT6				53	2	3									
NICOLA	870204	0925	28P	6.0	MT14				23	3	4									
NICOLA	870204	1000	28P	6.0	MT6				33	13	2									
NICOLA	870204	1040	28P	6.0	MT21				151	13	3									
NICOLA	870225	1500	40	1.0	ES	10		42	9		37							.08±.03		.33±.07
NICOLA	870226	1030	38	1.5	ES	20		35	18		29							.18±.04		.32±.11
NICOLA	870226	1505	36	3.5	ES	14		52	9		37							.10±.15		.37±.19
NICOLA	870227	0930	26	0.5	ES			7			7									.22±.01
NICOLA	870227	1030	20	1.0	ES			41			37									.34±.06
NICOLA	870227	1200	21	2.0	ES			9	1		9							.01		.09±.01
NICOLA	870227	1400	18	2.5	ES	110	16		72	14	2							.75±.36	.11±.04	.05
NICOLA	880127	0855	28P	6.0	MT6				31	21	5									
NICOLA	880127	0915	28P	6.0	MT4				30		5									
NICOLA	880127	0930	28P	7.0	MT7				8	1	3									
NICOLA	880127	0945	28P	7.0	MT9				51	5	3									

RIVER SYSTEM	DATE YRMODA	TIME PST	STA NO	TEMP	SM	POP'N EST CH	CO	RBT	TOTAL SITE CATCH CH	CO	RBT	MWF	DV	LMP	CYP	SU	OTH	POPULATION CH	CO	DENSITY RBT
NICOLA	880218	0855	28P	7.0	MT7				54	3										
NICOLA	880218	0940	28P	7.0	MT12				75	11	5									
NICOLA	880218	1030	28P	7.0	MT12				26		5									
NICOLA	880218	1055	28P	7.0	MT6				33	1	3									
NICOLA	880218	1120	28P	7.0	MT12				24	4	10									
NICOLA	880223	0830	28P	5.0	MT12				27	6	5									
NICOLA	880223	0930	28P	5.0	MT6				31		2									
NICOLA	880223	1000	28P	7.5	MT12				13		3									
NICOLA	880223	1030	28P	7.5	MT12				28	2	7									
NICOLA	880223	1130	28P	8.0	MT7				108											
NICOLA	880308	1530	40	6.0	ES	12		31	12		30				4	1		.11±.01		.29±.03
NICOLA	880309	1030	38	6.0	ES	11		27	9		21		30					.14±.11		.33±.17
NICOLA	880309	1320	36	6.0	ES	17		76	17		66		9			1		.17±.01		.76±.14
NICOLA	880309	1510	27	6.0	ES	4		15	4		14		1		2			.06±.03		.20±.05
NICOLA	880309	1620	22	6.0	ES			7			7		60							.10±.01

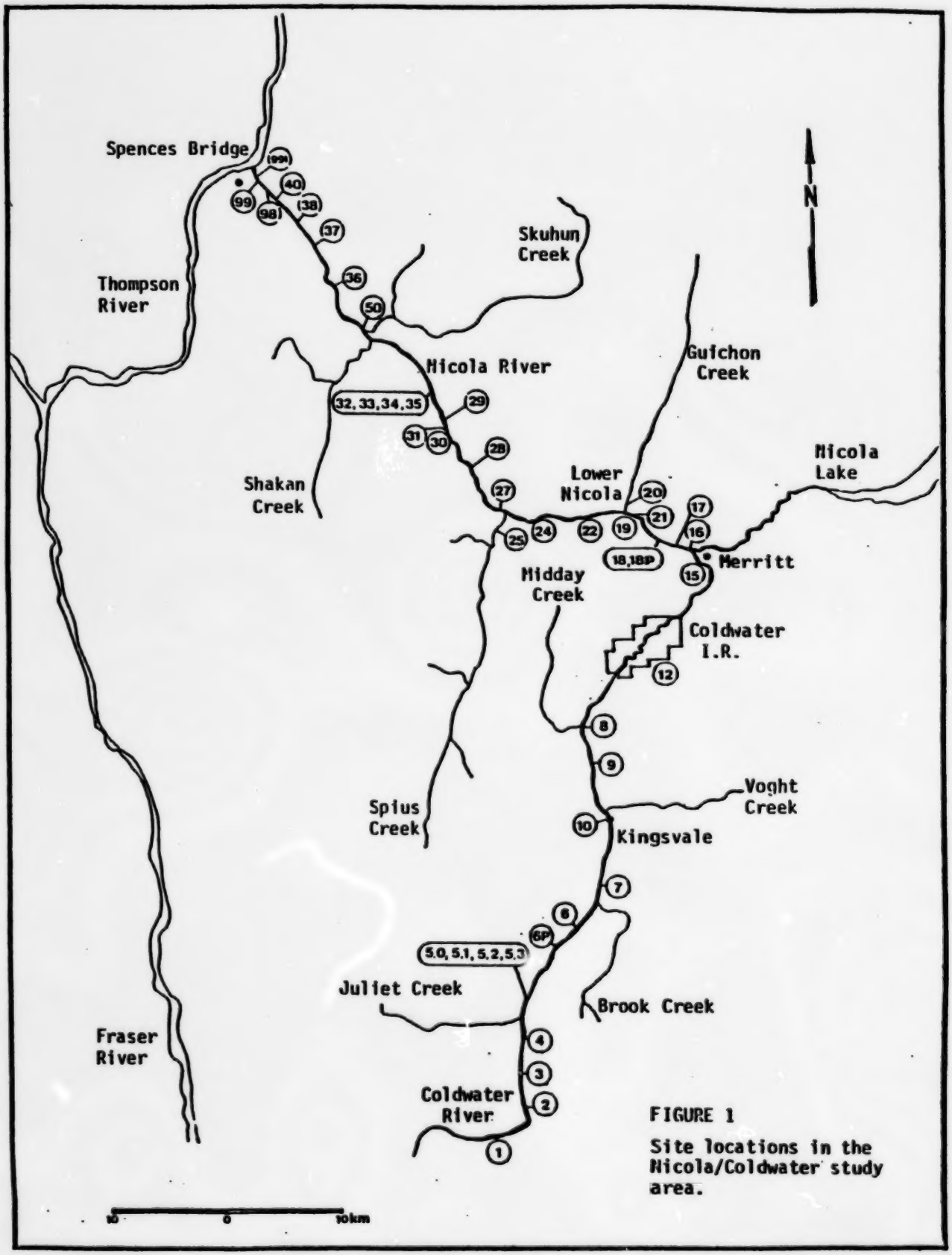

FIGURE 1

Site locations in the Nicola/Coldwater study area.